

# Proposed Regulation for the Mandatory Reporting of Greenhouse Gas Emissions

Pursuant to the California Global Warming  
Solutions Act of 2006 (AB 32)

December 6, 2007  
El Monte, California



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## Overview

- Introduction
- Mandatory Reporting Regulation
- Verification
- Economic Analysis
- Proposed Modifications



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## Statutory Requirements for Mandatory Reporting

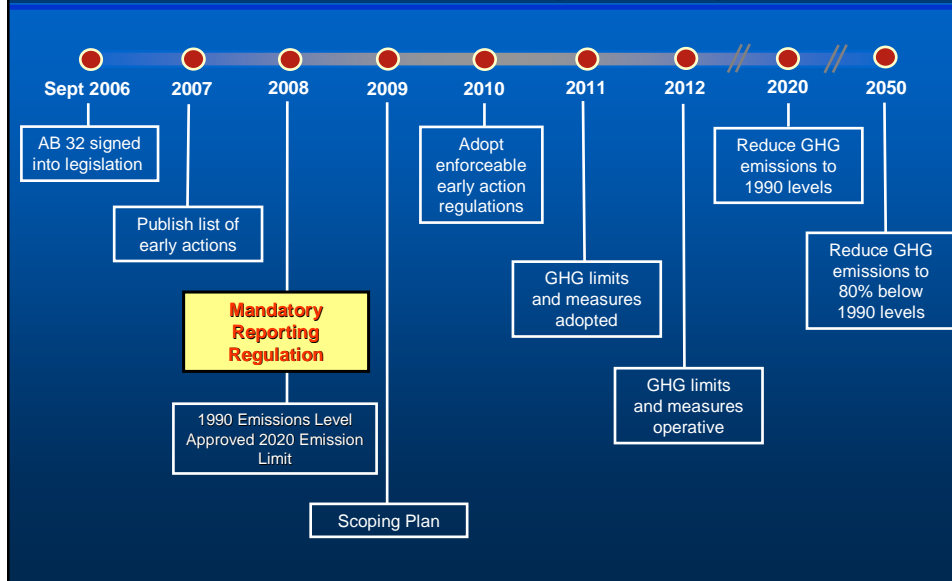
- Begin with largest sources
- Account for all electricity consumed, including imports
- Ensure rigorous and consistent accounting
- Include a verification component
- Use California Climate Action Registry (CCAR) protocols as appropriate



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## California Global Warming Solutions Act of 2006 (AB 32)



## Goals of Reporting Program

- Completeness
- Consistency
- Transparency
- Accuracy
- Support overall program needs



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## Proposed GHG Reporting Regulation



## Who Reports?

- Electric generating facilities, retail providers, and marketers
- Cogeneration facilities
- Oil refineries, hydrogen plants
- Cement plants
- Large combustion sources
  - $\geq 25,000$  MT CO<sub>2</sub>/yr

94% of  
point  
source  
CO<sub>2</sub>  
emissions



## Key Requirements

- Annual facility-based reporting
- Report based on operational control
- Kyoto gases
- Comprehensive power sector requirements
- Third party verification



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## Key Requirements (continued)

- Report combustion, process, and fugitive emissions
- Scope of reporting
  - Fuel use
  - Indirect energy use
  - Emissions measurements
  - Fuel testing as required
- Provides *de minimis* reporting level



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## Reporting Schedule

- Begin in 2009 on 2008 emissions
- Transitional year for 2008
- Full compliance with methods in regulation for 2010 and later reports
- Verification required beginning 2010



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## Electric Generating Facilities, Retail Providers, and Marketers



## Who Would Report?

- Operators of electric generating facilities  $\geq 1$  MW that emit  $\geq 2,500$  MT of CO<sub>2</sub> per year
- Retail Providers
  - Investor and publicly owned utilities, other specified operators serving end users
- Marketers
  - Other purchasers or sellers of imported and exported power



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## What Will be Reported?

- Operators of electric generating facilities
  - Direct emissions
- Retail Providers
  - Direct emissions
  - Purchases and sales
- Marketers
  - Purchases and sales



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## Use of CPUC/CEC Recommendations

- Staff proposal reflects CPUC/CEC joint recommendations
- Reporting allows for all potential regulatory approaches
- ARB would calculate emissions from reported purchases and sales
- CPUC/CEC recommend revisiting emission factors annually



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## Cogeneration Facilities

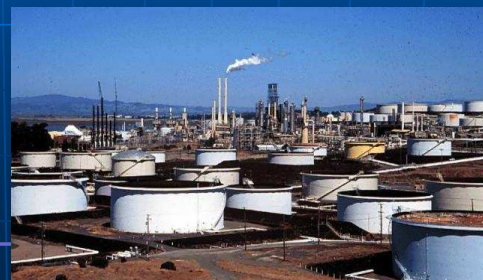
- Based on CCAR Protocol
- CO<sub>2</sub> emissions calculated for both electricity and thermal energy generation
- Reporting threshold similar to power
- Staff proposing modifications for smallest plants



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## Petroleum Refineries and Hydrogen Plants





## Petroleum Refineries: Basis for Proposal

- American Petroleum Institute (API) Compendium
- CCAR Refinery Protocol Discussion Paper
- CA Air District rules and methods
- US EPA, IPCC/EU Guidance for storage tanks and wastewater



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## What Will Refineries Report?

- Combustion Emissions
  - Daily and monthly fuel testing to develop refinery-specific emission factors
- Process related GHG emissions
- Fugitive and flaring emissions



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## Petroleum Refining Issues

- Frequency of sampling
  - Proposed daily sampling consistent with EU and IPCC
- Impacts on small refineries
  - Staff proposing modifications
- Reporting procedures during breakdowns



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## Hydrogen Production

- Staff modified existing API method to:
  - Reflect variations in plant operations
  - Avoid double counting GHG emissions



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## Cement Plants

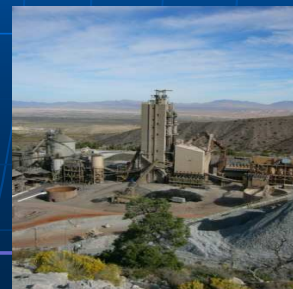


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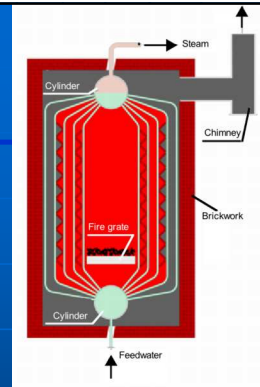
## Cement Plant Reporting

- In-state emissions reported
  - $\text{CO}_2$ ,  $\text{N}_2\text{O}$ , and  $\text{CH}_4$  from combustion
  - $\text{CO}_2$  from manufacturing process
  - Fugitive  $\text{CH}_4$  from coal storage
  - Efficiency metrics
- Imports and leakage are an issue



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## General Stationary Combustion Facilities (GSCs)



## General Stationary Combustion

- Large combustion facilities emitting  $\geq 25,000$  MT CO<sub>2</sub>
- Emission calculations typically based on fuel consumption
- Process and fugitive emissions slated for future evaluation



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## Example Facilities Greater than 25,000 MT CO<sub>2</sub>e

- Natural gas transmission
- Industrial gases
- Paperboard manufacture
- Colleges and universities
- Oil production
- Food processing
- Steel foundries
- Mineral processes
- Glass container
- Malt beverages



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## Verification



## Third Party Verification

- AB 32 requires verification
- Proposal built on international standards
- Consistent CCAR and EU approaches
- Both private sector and California air districts can be verifiers



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## ARB Process

- Verification training to be offered in 2008
- ARB to accredit verifiers
- ARB to conduct targeted audits of verifiers and reported emissions



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## Nature of Verification

- Site visits
- Sampling plan
- Data checks on largest and most uncertain sources
- Overall differences exceeding 5 percent considered significant
- Verification opinion issued



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## Economic Analysis



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## Overall Economic Impacts

- About 800 sources affected
- Costs for reporting and verification \$21-\$30 million/yr statewide
- Costs likely to decrease over time
- No loss of business expected
- Small increase in jobs



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## Proposed Modifications



## Proposed Modifications

- De minimis cap of 20,000 MT CO<sub>2</sub>e
- Reporting procedures during instrumentation breakdowns
- Power sector clarifications
- Small refinery fuel testing
- Small cogeneration reporting
- Other minor modifications

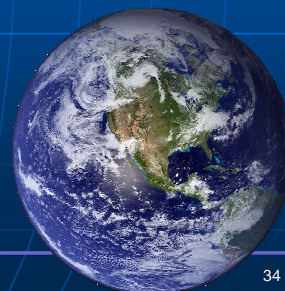


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## Staff Recommendation

- Staff recommends approval of the proposed regulation and modifications



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